Opto News

Lucent licenses quantum cascade laser to AOI

Lucent Technologies Inc has signed the first licensing agreement for its quantum cascade laser technology with Applied Optoelectronics Inc (Sugar Land, TX, USA), allowing manufacture and distribution for non-telecom applications.

The QC laser was demonstrated in 1994 at Bell Laboratories by Federico Capasso, Alfred Cho and collaborators. It is the first semiconductor laser that can operate at room temperature with powers of 0.5 W (important for compact, portable devices) in the mid-infrared (the only wavelength range for sensitive detection of many chemicals). Also, the wavelength can be precisely tuned over a broad range to detect a variety of trace gases with a sensitivity of a few parts per billion. AOI is pursuing sensor applications for combustion diagnostics, environmental sensing, medical diagnostics, industrial process control and law enforcement.

According to Dr James Baillargeon (one of the developers at Bell Labs and now AOI's vp for Laser Development) the QC laser is "probably the most complicated semiconductor structure ever commercially produced". It contains up to 1000 alternating epi layers just a few atoms thick and within a few percent of the target composition. AOI has therefore bought several high-volume MBE systems. At the Electronic Materials Conference in Denver, CO, USA AOI reported that its first laser has already shown performance close to the best achieved at Lucent.

The QC lasers will be available commercially in September.

Applied Optoelectronics
Tel: +1-713-743-3497

Nova's 1.3 μm VCSEL

Nova Crystals Inc (San Jose, CA, USA) has launched what it claims is the first practical, electrically-pumped 1.3 μm VCSEL, with the highest power reported to-date (operating at 1 mW CW up to 100°C without active cooling, a data rate of 2.5 Gbps and less than 2 V), for sampling in October.

Though not saying which materials have been used, Nova has applied "a number of device design and process innovations to traditional InP technology".

"Several other research groups have demonstrated 1.3 μm VCSELs in the lab", says CEO Felix Ejeckam "but none of these have combined all the performance, high-reliability and cost factors necessary for a commercially viable device".

Nova Crystals Inc
Tel: +1-408-434-6682
Fax: +1-408-434-6330

Opto Communications News

Lucent to spin off its microelectronics business

Lucent Technologies (Murray Hill, NJ, USA) is to spin off its microelectronics business (including its opto and silicon IC divisions) as an as-yet unnamed new company (baed in Allentown, PA, USA).

President and CEO will be John Dickson (formerly executive vp and CEO of the Microelectronics and Communications Technologies group). An Initial Public Offering of up to 20% of its shares will take place by end-Q1/2001, and a tax-free distribution of the remainder will be made by summer 2001.

More than US$4bn in sales over the last four quarters and 16,000 staff in 105 locations worldwide will make the new company "the world's leading provider of communications semiconductors". As electrical and optical technologies converge "it will be the only stand-alone component company with the ability to marry the worlds of silicon and optical on its own", says Lucent chairman and CEO Richard McGinn. More than 75% of sales come from outside Lucent, often selling to competitors. "This new company will be able to accelerate its growth now that it's free from this strategic conflict," he added.

"The communications infrastructure and semiconductor markets have become so big, so fast-moving and so competitive that it is time to divide in order to accelerate growth," said McGinn.

Over the last 18 months, the group has invested about US$1bn in expanding manufacturing capability and almost US$4bn in acquisitions, including 10 in the core networking and professional services areas. In the last six months, the business has acquired opto companies Herrmann Technology and Ortel (opto component supplier for cable modems), and IC company Agere and the design, marketing and sales teams of VTC.

Lucent claims it will lead the opto industry in manufacturing automation, modulators for 10 and 40 Gbps optical networking systems, submarine optoelectronics, and communication lasers (the opto business grew more than 80% over the last year and has expanded its automated opto manufacturing plant in Pennsylvania, quadrupling capacity by year-end).

Lucent Technologies
Tel: +1 908-582-3060